



Oregon

Theodore R. Kulongoski, Governor

Department of Environmental Quality

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RECEIVED

JUL 27 2009

Environmental
Cleanup Office

July 22, 2009

Glen Dollar
Environmental Health and Safety
Ash Grove Cement Company
13939 N. Rivergate Blvd.
Portland, OR 97203

Re: **Notice of Site Assessment Review**
Ash Grove Cement – Rivergate Plant
13939 N. Rivergate Blvd.
Taxlot ID 2N1W26C 0700
Portland, Oregon
Multnomah County
ECSI # 4696

Dear Mr. Dollar:

The Oregon Department of Environmental Quality (DEQ) has completed its review of available information and site history for the Ash Grove Cement site at 13939 N. Rivergate Boulevard, in Portland, Oregon. I had originally opened a file and initiated a review of the site in 2006 and met with you and visited the site. The review was shelved for a couple of years, but now has been completed. For the review DEQ used information gathered during our original work and site visit, plus review of materials provided to us from the U.S. Environmental Protection Agency (EPA) – Region 10, that Ash Grove Cement had provided in response to a 401(e) request from EPA.

Our review and findings are summarized in the attached Strategy Recommendation report.

DEQ's major findings for the Ash Grove Cement – Rivergate Plant site were as follows:

- Quick lime: The potential for high-pH quicklime to discharge to the River is apparently low based on observations of Ash Creek records and good performance under their Industrial discharge permit. However, records do show that some lime has been released into the shore area over the period of the site's operation. In addition, recent aerial photographs (see Figure 4) indicate an area of discharge from the site in the northeast corner.
- Above-ground Fuel Storage Area – Groundwater monitoring in the AST area has measured releases of petroleum contamination. The concentrations are below DEQ risk-based values applicable to the site. Since large volumes of fuel are no longer stored in this area and containment structures are in place, the overall risk from the fuel storage area is considered low.

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- Sources of contamination in area surrounding dredge prism – DEQ also believes it would be worthwhile to perform further investigation in the area in and around the dredge prism samples collected in August of 2006 in order to determine possible sources

Due to the number of sites in the state that may require further attention, DEQ's Site Assessment Program prioritizes further investigation and/or cleanup needs based on the potential threat(s) site contamination poses to human health and/or the environment. DEQ assigns a low, medium, or high priority to each site it reviews.

The Ash Grove Cement – Rivergate Plant site has been assigned a **medium priority** for further investigation by DEQ. Given the medium priority for further investigation the following options are available to you:

- 1) Conduct further work at the site under DEQ's Voluntary Cleanup Program (VCP). With this option, owners and operators obtain full DEQ oversight during the project, and may continue without delay through site characterization or cleanup, as needed. In the VCP, you pay an initial deposit of \$5,000 to cover DEQ's anticipated oversight costs. You will be invoiced if total costs exceed the initial deposit, or reimbursed if total costs are less than the deposit. To help minimize owners' and operators' financial uncertainties, DEQ can estimate its VCP oversight costs before beginning the project. The VCP can also provide flexibility in phasing and scheduling the work to minimize financial uncertainty.

If you elect to join the VCP, you must send a signed VCP *Intent to Participate* form to DEQ, which will place your site on the VCP waiting list. The currently anticipated waiting time is 6 to 8 weeks before your site can be assigned to a VCP Project Manager. Further information on the VCP and *Intent to Participate* forms are available at DEQ's web page <http://www.deq.state.or.us/wmc/cleanup/vcp0.htm>.

- 2) Conduct further work at the site under the Independent Cleanup Pathway (ICP), where you can set your own schedule for investigation and cleanup and choose the level of DEQ oversight your desire. DEQ offers site-specific technical consultation as an option to help program participants during project work in the ICP on a cost-recovery basis. This consultation could include work plan review, site investigation report review, beneficial use determinations, and/or final report review. In the ICP, you pay an initial deposit of \$1,500 to cover DEQ's anticipated report review and/or technical consultation costs. You will be invoiced if total costs exceed the initial deposit, or reimbursed if total costs are less than the deposit. As with the VCP option above, DEQ can estimate its ICP oversight costs before beginning the project. To enter the ICP, you must send a signed ICP *Intent to Participate* form to DEQ. Details about the ICP qualifying criteria and *Intent to Participate* forms are available on DEQ's web page, at: <http://www.deq.state.or.us/wmc/cleanup/icp-main.htm>.
- 3) Conduct further investigation and/or cleanup on your own, with no DEQ oversight at this time. If you pursue this option, DEQ recommends keeping detailed records of your activities and submitting those records to DEQ when requested. Then, in accordance with its priorities, DEQ will review these records and determine if further action is needed. Note that there is an element of risk in performing work without any agency

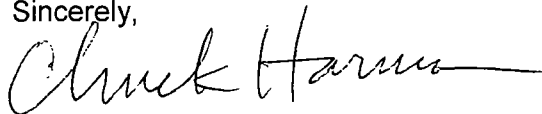
oversight or consultation. For example, DEQ may not concur with the scope of work or how site work has been implemented, or may determine that certain actions have worsened existing contamination.

4. Wait for DEQ to pursue further action at your site. When DEQ investigates, we will track our costs for any time spent on such investigation.

Because DEQ has reviewed this site under an agreement with the U.S. Environmental Protection Agency (Cooperative Agreement V-990519), DEQ has the option of recommending at any time that EPA add this site to the national CERCLIS list. CERCLIS is an acronym for the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, commonly called Superfund; it refers to the national database of sites requiring further EPA action. Once a site is added to CERCLIS, an EPA Preliminary Assessment must be completed at the site within 12 months. At this time, DEQ does not believe that the Ash Grove Cement – Rivergate Plant to EPA should be added to CERCLIS.

If you have any questions regarding my report you can reach me at (503) 229-5585.

Sincerely,



Chuck Harman, Site Assessment Specialist
DEQ Northwest Region

Enclosures:

- (a) Strategy Recommendation Report – Ash Grove Cement – Rivergate Plant (ECSI #4696), June 29, 2009

cc: Charles T. Wiedenhoft, President, Ash Grove Cement Company
Joanne Labaw, U.S. Environmental Protection Agency, Region 10
Kristine Koch, U.S. EPA, Region 10, Office of Environmental Cleanup
Environmental Cleanup Site Information (ECSI) file, #4696

DEQ SITE ASSESSMENT PROGRAM – SITE STRATEGY RECOMMENDATION

Site Name: Ash Grove Cement – Rivergate Plant

Property Owner: Ash Grove Cement Company
11011 Cody Street
Overland Park, KS 66210
Contact: Glen Dollar, Safety and Environmental Manager

EPA CERCLIS Number: None.

DEQ ECSI Number: 4696

Site Address/Location: 13939 N. Rivergate Blvd., Portland, OR
Multnomah County
TRS: Township 2N, Range 1W, Section 26
Latitude: 45 degrees, 37 minutes, 21.76 seconds
Longitude: -122 degrees, 47 minutes, 5.51 seconds
Tax Lot ID: 2N1W26C 0700
Size: 29.61 acres

Recommendation By: Chuck Harman, Site Assessment Section, DEQ Northwest Region

Approved By: Bruce Gilles, Cleanup and Emergency Response Manager, DEQ Northwest Region

Date: June 29, 2009

Background

The Ash Grove Cement – Rivergate Plant (AGC) site was added to DEQ's Environmental Cleanup Site Information (ECSI) database in August of 2006 due to measurements of elevated contaminants in sediments along the site's pier in the Willamette River. The sediments were sampled in preparation for dredging in the area adjacent to the pier. Sediments were found to contain elevated concentrations of polynuclear aromatic hydrocarbons (PAHs), polychlorinated pesticides/herbicides, and polychlorinated biphenyls (PCBs). Due to these measurements the site was referred to DEQ Northwest Region's Site Assessment Program.

Ash Grove Cement has operated a plant at this location since 1963.

This screening will review historic site information, evaluate potential contamination sources and recommend possible future actions at the site. This screening is being performed under an

agreement between DEQ and the U.S. Environmental Protection Agency (Cooperative Agreement V-990519).

In Spring of 2008, EPA Region 10 sent Ash Grove Cement a 104(e) information request. Ash Grove Cement (AGC) responded in October of 2008 with a series of reports, appendices and answers to questions. DEQ reviewed some of this material, but a full summary of all of the information provided in the 104(e) response is beyond the scope of this report. Copies of the materials from the 104(e) request will be kept in DEQ's file for this site.

Physical Setting

- Site Topography and Setting

The site is located at 13939 N. Rivergate Boulevard, in Portland, Oregon. The site location is shown on Figure 1. Based on DEQ's review of topographic maps and a site visit, this site is predominantly flat, with a steep embankment into the Willamette River along its west side. Topographic maps show that the property is at about 35 feet above sea level (asl) and slopes to the water line, which is about at 10 feet asl, but will fluctuate seasonally and is tidal influenced.

The site is located in a heavy industrial area in north Portland.

The site is not served by municipal sewers. There is a septic drainfield located on the east side of the property in an open grassed area, but AGC has been hooked up to sanitary sewer since 2002.

- Local Land Use

Figure 2 is an aerial photograph from 2007 from Google Earth which has been annotated to highlight site features and surrounding area land uses. The area around AGC is used for heavy industrial, and is zoned as such.

The properties that border the site to the north, south, and east are largely industrial, with JR Simplot (ECSI # 3343), an agricultural supplier to the north, Consolidated Metco (ECSI# 3295) and Beall Trailers (ECSI# 10) to the east, and a warehouse/shipping business leased to Georgia-Pacific by the Port of Portland to the south.

The nearest residential area is located approximately 0.44 miles to the west-northwest and consists of rural residential farm properties along the eastern edge of Sauvie Island, across the Willamette River from the site.

- *Geology and Groundwater*

AGC is located in the Columbia River flood plain physiographic province of the Portland Basin, at an approximate elevation of 35 feet above mean sea level. The area geology is characterized by alluvium deposits to depths exceeding 200 feet before encountering cemented sand and gravel of the Troutdale formation.

The uppermost stratigraphic unit at the site consists of at least 10 feet of sand which transitions into a silty clay. Soil borings for the site, taken during installation of monitoring wells that were placed around the above ground fuel tank storage area in 1992, show dark grey silt or black sand down to about 16.5' bgs, where wood fragments were encountered. The borings, recorded in December of 1992 found shallow groundwater at 10 feet bgs. Groundwater flow direction in the monitoring wells has generally been to the west and northwest.

DEQ performed an updated review of available online Oregon Water Resources Department (OWRD) well records for wells in township 2 north, range 1 west, section 26, within which the site is located, and the five surrounding sections to the north, south and east – an area of 6 square miles. Well logs for areas to the west were not examined, since DEQ assumed that the Columbia River would form a hydraulic divide between shallow site groundwater and wells to the west.

There were five (5) domestic use-listed wells and no community wells found in the search. Several of the domestic use wells were cross-reference with older industrial wells and since a public water supply is available, are likely not used for drinking water. However, for conservatism, the site ranking assumes them as drinking water wells. There were 5 industrial and 3 irrigation use wells located in the search area.

AGC operates an industrial-use well that was established in 1963, which they state is cased to 150 feet below ground surface (bgs) and can provide 500 gallons-per-minute (gpm) of water. Water is used primarily for non-contact cooling water.

- *Soils*

USDA soil survey maps indicate that soils in the area are defined as Pilchuck-urban land - complex series, described as somewhat excessively drained.

The eastern one-quarter of the property is undeveloped and has been open and covered in grass since the property was developed around 1962. The septic drainfield is located in this area (as noted on Figure 3). Much of the western half of the property is packed gravel, and as is evident in several figures, covered with lime residue.

- *Hydrology and Surface Waters*

From the top of the bank along the west edge of the site, which is at about 35 feet asl, the bank slope drops sharply down to the Willamette River. Much of the site is not paved and AGC noted that much of their stormwater just percolates downward. There are several stormwater runoff control features on the site, as noted on Figure 3 and the site facility map presented on Figure 5.

A closer inspection of more recent aerial photographs (2007) does indicate an area along the northwest edge of the property where there does appear to be some spill-over of lightly colored, grayish material that has either drained or been pushed towards the river by what appears to be a small road. This feature is noted on Figure 4.

The Willamette River is a local recreational resource that provides wildlife habitat and opportunities for small craft boating and fishing. This site is located within the Portland Harbor Study Area. Portland Harbor is an approximate 6.5 mile long reach of the lower Willamette River within Portland that is a listed Superfund site.

The Willamette River is listed as Critical Habitat for Upper Willamette River Chinook salmon (Federal and Oregon threatened), Lower Columbia River coho salmon (Fed. threatened; Oregon endangered) and Upper Willamette River steelhead (Fed. - threatened). For the reasons noted above, the Willamette River has been identified as a "Vulnerable Area" by DEQ.

Total precipitation in this area averages 36.3 inches each year.

Site History and Ownership

The Ash Grove Cement quicklime plant was established on the property in 1963, purchased from the Port of Portland. Its primary operation has been to receive limestone rock, kiln and grind it into "quicklime" (calcium oxide), and then ship it out.

DEQ reviewed historic aerial photographs provided from the U.S. Army Corps of Engineers (USACOE). A brief summary of significant observances from available aerials, from 1956 to 1995, that captured the property is provided below¹:

1956: The property is undeveloped. A tank farm (currently known as Time Oil, ECSI #170) is present approximately 0.4 miles south of subject property.

1961: Photograph provided does not show subject property.

¹ Aerial photographs have been placed in DEQ's files and not provided as part of this report.

1963: Photograph of Ash Grove Cement plant, presumably after completion of plant construction. Notable features are - two apparent ditches that begin about midway of the north and south borders of the property. The properties to the north and south are vacant.

1967: Similar to 1963, with only notable difference being evident lime piles underneath the central and south conveyor systems.

1972 – Similar to 1972, but with addition of large AST (435,000-gallon) just east of kilns at AGC. Lime piles evident. A large warehouse like structure is present on the property to the south. It appears some initial construction is occurring at JR Simplot property to north. Buildings are also present to the northeast and east.

1980 – Similar to 1972 on AGC site, with addition of 25,000 gallon AST next to large AST. There is more development all around AGC property. JR Simplot to north appears to be fully built out. A new building to southeast is present.

1991 (image is infrared) – Similar to 1980.

1995 – There is no observable change from the 1991 aerial.

From their response to EPA Region 10's 104(E) letter, AGC summarized the site's history and major structures as follows:

"Ash Grove Cement Company has owned the Rivergate Plant premises since the April 1963 date of purchase. The first phase of the lime plant was constructed and operational by 1964. At that time, the facility consisted of a barge mooring structure for receiving raw materials (e.g., limestone); material unloading, transporting and stockpiling systems; two calcimatic kilns; one hydrator; bulk storage silos; a warehouse; and an office. A third calcimatic kiln was put into production in 1977. A new hydrator was installed in 2001. The calcimatic kilns and hydrator produced quicklime and hydrated lime for Ash Grove until June 1, 2006 when Ash Grove discontinued lime production and leased a portion of its product handling facilities (e.g., principally its storage silos and conveyors and its hydrating facilities) to an unaffiliated third party – Graymont Western US, Inc. (Graymont)."

It should be noted that the kilns and site "ag" (grinding) mills, have been fueled by several different sources over the years. Below are tables cut and paste from the 104(e) request that summarize the fuels used and periods of use:

TABLE 20-2. FUEL SOURCES FOR THE KILNS AT THE RIVERGATE FACILITY

Fuel Type	Year Fuel Use Began	Year Fuel Use Ceased
Natural Gas	1964	2006
Propane	1964	1974
Fuel Oil ³⁰	1964	2006
Coal	1982	1990
Landfill Gas	1998	2006

TABLE 20-3. FUEL SOURCES FOR THE AG MILLS AT THE RIVERGATE FACILITY

Fuel Type	Year Fuel Use Began	Year Fuel Use Ceased
Natural Gas	1985	Ongoing
Landfill Gas	2000	Ongoing

Investigation History

Prior inspections and environmental sampling investigations performed on the site have been documented in several other reports prior to this updated screening – which are summarized in the references appendix. Below is a summary of the significant remedial actions, investigations and inspections conducted for the site and evidence of contamination observed or measured.

AST Area Monitoring Well Sampling:

In 1993 three monitoring wells were installed around the above ground storage tanks (ASTs). These wells have been sampled several times since then as a “leak detection” system. Sampling has occurred in February and June of 1993, June of 1998, and October of 2006. The 2006 sampling was considered to be a final evaluation since the kilns had been shut down and the ASTs would not be needed to store fuel for powering the kilns.

Detections of petroleum hydrocarbons, including volatile organic compounds and PAHs in groundwater occurred in both 1993 sampling events and in 2006. In October 2006 benzene was detected at 0.58 ppb and naphthalene at 0.1 ppb in groundwater – levels well below any applicable risk-based criteria, including Portland Harbor Joint Source Control Strategy (JSCS) screening level values for upland groundwater exposure for ecological receptors.

Overall, detections in October 2006 were generally below levels measured in 1993.

February 1990 Underground Storage Tank (UST) Decommissioning:

In February 1990, two 550-gallon gasoline USTs, located adjacent to the shipping/receiving building, were removed. Soil samples taken from the walls did indicate some petroleum contamination, but the highest concentration, 70 mg/kg (or parts-per-million, ppm) of total petroleum hydrocarbons (TPH) in soil was below the soil cleanup standard of 80 ppm for TPH.

The DEQ UST Program issued a no further action decision in June of 1991.

AGC Dredge Project – Sediment Sampling – September 1995:

Evaluation of Sediments from AGC dredge prism – In September 1995, AGC applied to the U.S. Army Corps of Engineers to dredge an area adjacent to its dock in the Willamette River. As part of the dredge permit process, AGC would also need to identify a disposal location, which required testing the sediments. The sediment “dredge prism” is shown on Figure 4, which presents the drawing submitted for the dredge area and a recent aerial photograph with the approximate dredge prism outlined. Samples from three locations within the dredge prism, a near surface (indicated by an “A”) and bottom sample (indicated by “Z”) were acquired. The surface sediment, C13-A was a composite of two samples. The bottom sediment, C123-Z was composited from three samples. Table 1 below summarizes the results from laboratory testing on the two sediment samples.

Table 1: 2005 AGC dredge prism sediment samples.

	C13-A (ppb)	C123-Z (ppb)	DEQ ERA SLV (ppb)
4,4'-DDE	5.4	2.9	1.5
4,4'-DDD	3.7	1.6	4
4,4'-DDT	2.5	1.2	4
Anthracene	150	14	57
Benzo(a)pyrene	2,200	50	32
Benzo(k)flouranthene	610	18	27
Chrysene	2,200	61	57
Dibenz(a,h)anthracene	240	8.2	33
Indeno(1,2,3-cd)pyrene	1,400	43	17
Phenanthrene	500	64	42
Total PCBs	224	54	34

KEY: yellow highlight – exceeds applicable SLV; “SLV” – screening level value; “-” = compound not analyzed in sample; nd = not detected, with detection limit noted by “<”; ne = no screening value established.

The sediment data shows that the upper sediments were more contaminated than sediments near the bottom of the dredge prism profile. Total PCBs and several PAHs were one order of magnitude or more than their screening level value.

DEQ Site Assessment Site Visit – November 2006:

DEQ Northwest Region Site Assessment visited the site in November of 2006 and walked the site with the Environmental Manager. The DEQ personnel walked the areas to evaluate potential areas where site stormwater runoff might enter the Willamette River and the area around the pier. No obvious runoff areas were observed. From the top of the river bank, DEQ observed the area around a discharge pipe (referred to as Outfall 001) located near the southwestern corner of the site and did not observe indications of site runoff - which would have resembled the white quicklime evident over much of the western half of the property.

Potential Contamination Sources

DEQ has identified several potential contamination sources on the site:

- A. Quick lime: The potential for high-pH quicklime to discharge to the River is apparently low based on observations by Ash Creek records and good performance under their Industrial discharge permit. However, records do show that some lime has been released into the shore area over the period of the site's operation. In addition, recent aerial photographs (see Figure 4) indicate an area of discharge from the site in the northeast corner.
- B. Above-ground Fuel Storage Area – Groundwater monitoring in the AST area has measured releases of petroleum contamination. The concentrations are below DEQ risk-based values applicable to the site. Since large volumes of fuel are no longer stored in this area, the overall risk is considered low.

Contaminant Pathways and Threats

Soil – The site is covered in quick lime, but there are only a few minor instances documented in Ash Grove Cement's records of exposure to material.

DEQ's review of site records did show several spills and contamination in soil from a decommissioned UST nest and in the AST area. However, remedial actions taken to respond to the noted incidents, and the low levels of contamination measured in the UST and AST do not indicate that there is any significant soil contamination present on the site.

Groundwater – There were only a few domestic use water supply wells listed in the Oregon Water Resources well log database within 1-2 miles of the site. Due to the sites' proximity to the Willamette River DEQ believes that shallow groundwater most likely drains via seepage into

the river. Since there were no major releases to groundwater documented in our research, DEQ concludes that the potential threat to any groundwater used as drinking water is low.

Surface waters – Potential discharge of contaminated stormwater runoff from the site appears has occurred periodically, but rarely – there are three documented instances. DEQ does recommend that the area in the northwest corner of the site should be examined more closely based on our review of recent aerial photographs.

The measured contaminant concentrations in the dredge prism area alongside the AGC pier are at levels that pose a threat to aquatic species, but the exact source or sources is not yet known.

Summary and Conclusions

There are only a couple of areas where suspected or potential hazardous substances are stored on the AGC site. The primary water quality concern is from quick lime discharge to the Willamette River.

DEQ's review did not find any specific source area or discharge point that directly links the site to the contaminants found in the dredge prism.

The primary exposure pathway of concern is aquatic species exposure to sediments possibly contaminated by runoff.

Recommendations

Since this site is adjacent to the Willamette River, DEQ recommends further investigation of the shoreline area, discharge points from AGC, such as the northwest corner, and sediments around the dredge prism area to determine: (a) the extent of dredge contaminants and possible sources; and (b) areas of suspected quicklime discharge. Since the site is within the Portland Harbor Study Area DEQ believes that further investigation in this area is warranted.

This site is listed on DEQ's ECSI database, as site #4696. Since no specific release has been found and the dredge prism contaminants cannot be directly sourced to the site itself, the site will not be added to DEQ's Confirmed Release List and Inventory of sites requiring further investigation and/or cleanup.

FIGURES

Figure 1: Site location on USGS topographic map of site in north Portland, Oregon.

Figure 2: AGC property 2007 aerial photograph of site with nearby land use identified.

Figure 3: AGC property 2007 aerial photograph with site features noted.

Figure 4: Annotated photograph of shore area along west side of AGC property, with stormwater runoff discharge channels highlighted.

Figure 5: Detailed site diagram provided by Ash Grove Cement.

References

1. Ash Grove Cement Company, "Response to EPA's 104(e) First Request for Information, Ash Grove Cement Company, Portland Harbor Superfund Site," October 2008 (and several Attachments)
2. Parsons Brinckerhoff, Integral Consulting Inc., "Sediment Data Report, Ash Grove Cement Company, Willamette River, Portland, Oregon," September 19, 2005.
3. Oregon Department of Fish and Wildlife (ODFW), "Fish Distribution/Habitat Maps", URL: <http://osu.orst.edu/dept/nrimp/information/fishdistmaps.htm>, Updated in February 2001.
4. Oregon Department of Human Services, DHS Environmental Toxicology Program, Fish Consumption Advisories – Consumption Guidelines.
URL: <http://oregon.gov/DHS/ph/envtox/fishconsumption.shtml>.
5. Oregon Division of State Lands (DSL), "Essential Salmon Habitat"; <http://oregonstatelands.us/DSL/PERMITS/essshabitat.shtml>; July 2008.
6. City of Portland, Corporate Geographic Information System (CGIS) database, <http://www.cgis.ci.portland.or.us/main.cfm>, April 2008.
7. United States Geological Survey (USGS), "Geology of Portland, Oregon and Adjacent Areas, Geological Survey Bulletin 1119", D. E. Trimble, US Government Printing Office, Washington, 1963.

Figure 1: Site location map for Ash Grove Cement – Rivergate Plant in north Portland, Oregon.

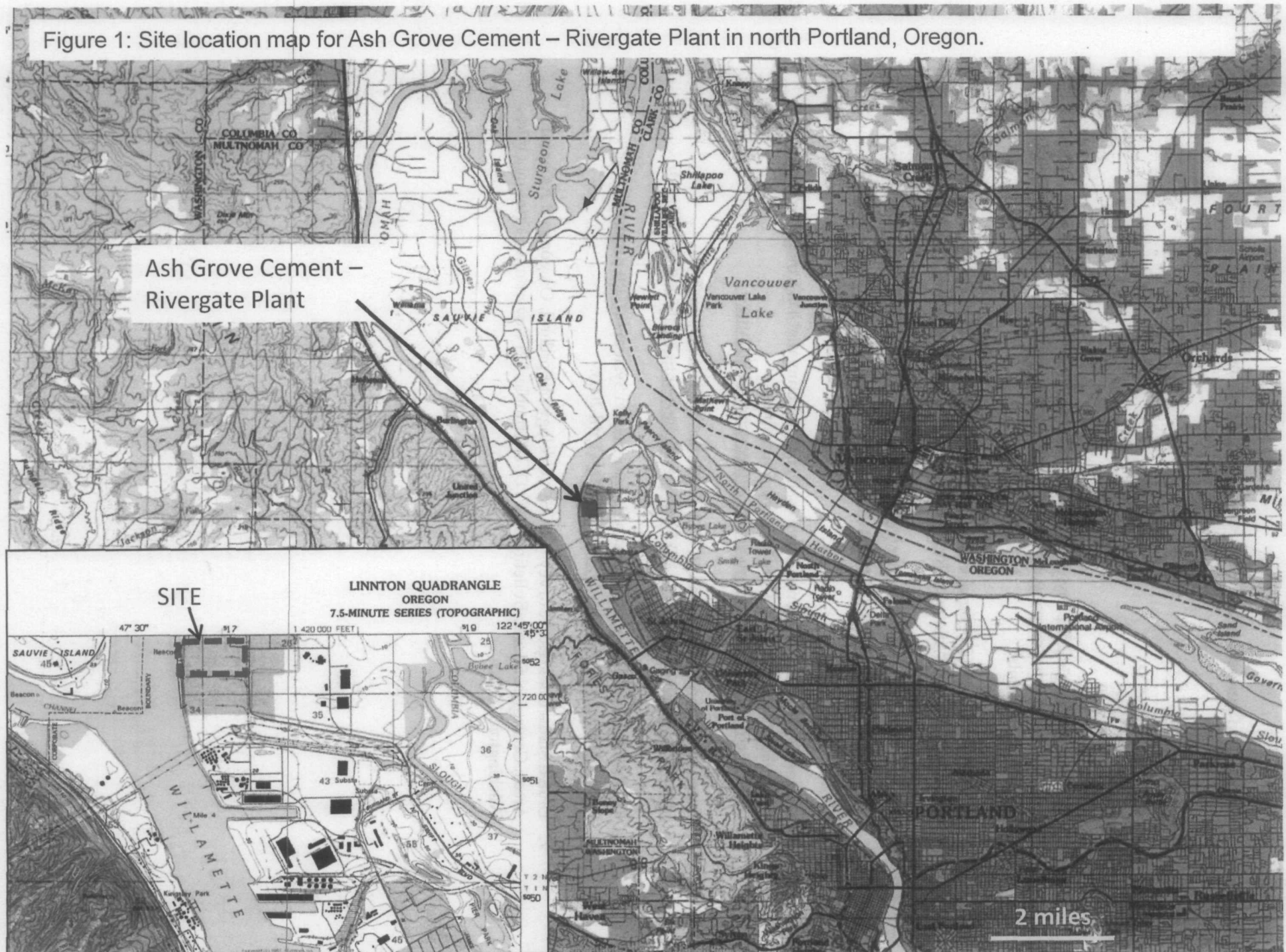


Figure 2: Aerial photograph showing Ash Grove Cement site and surrounding area (2008). (from Google Maps)

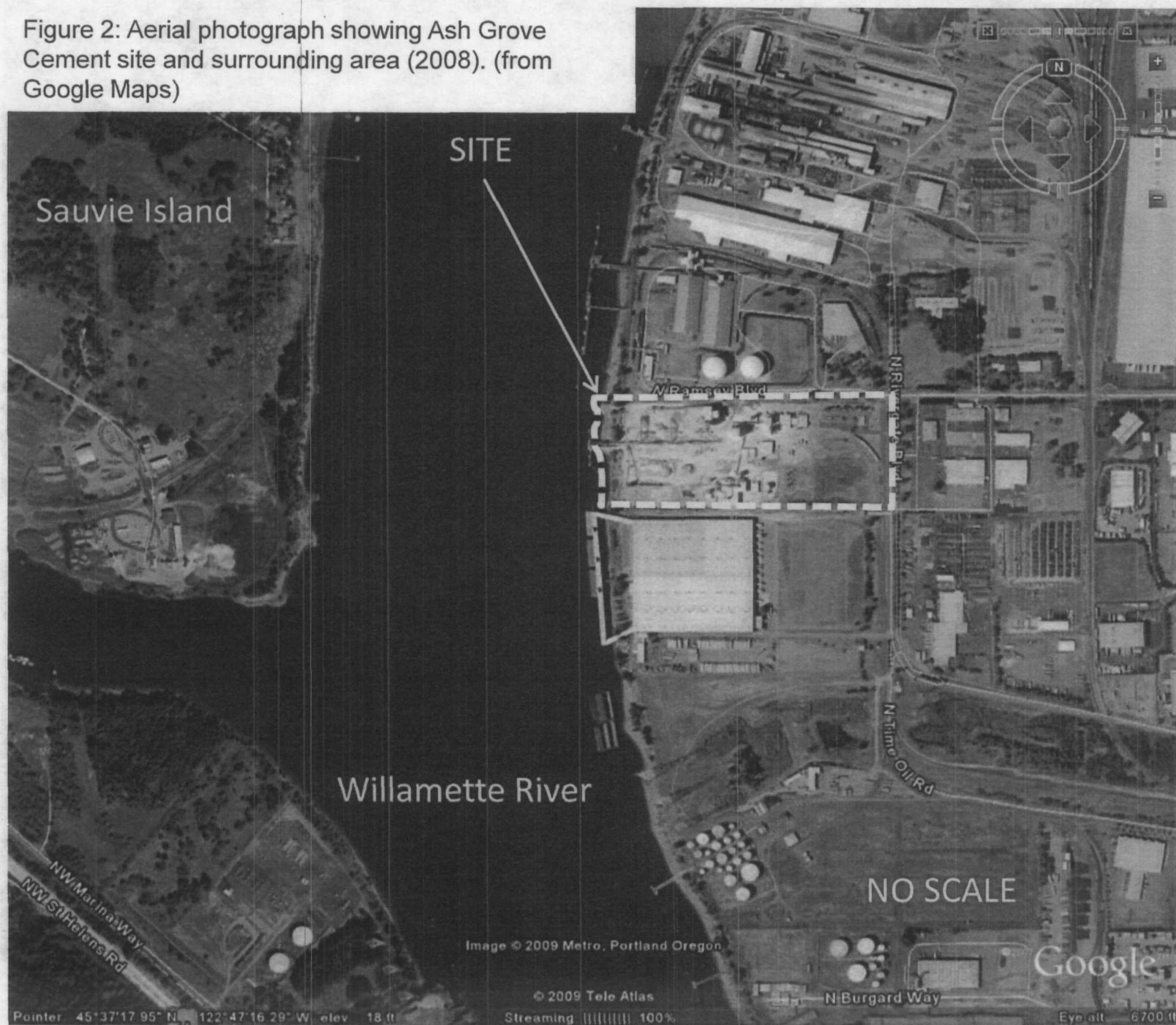


Figure 3: Aerial photograph showing Ash Grove Cement site and site features. (2008 from Google Maps)

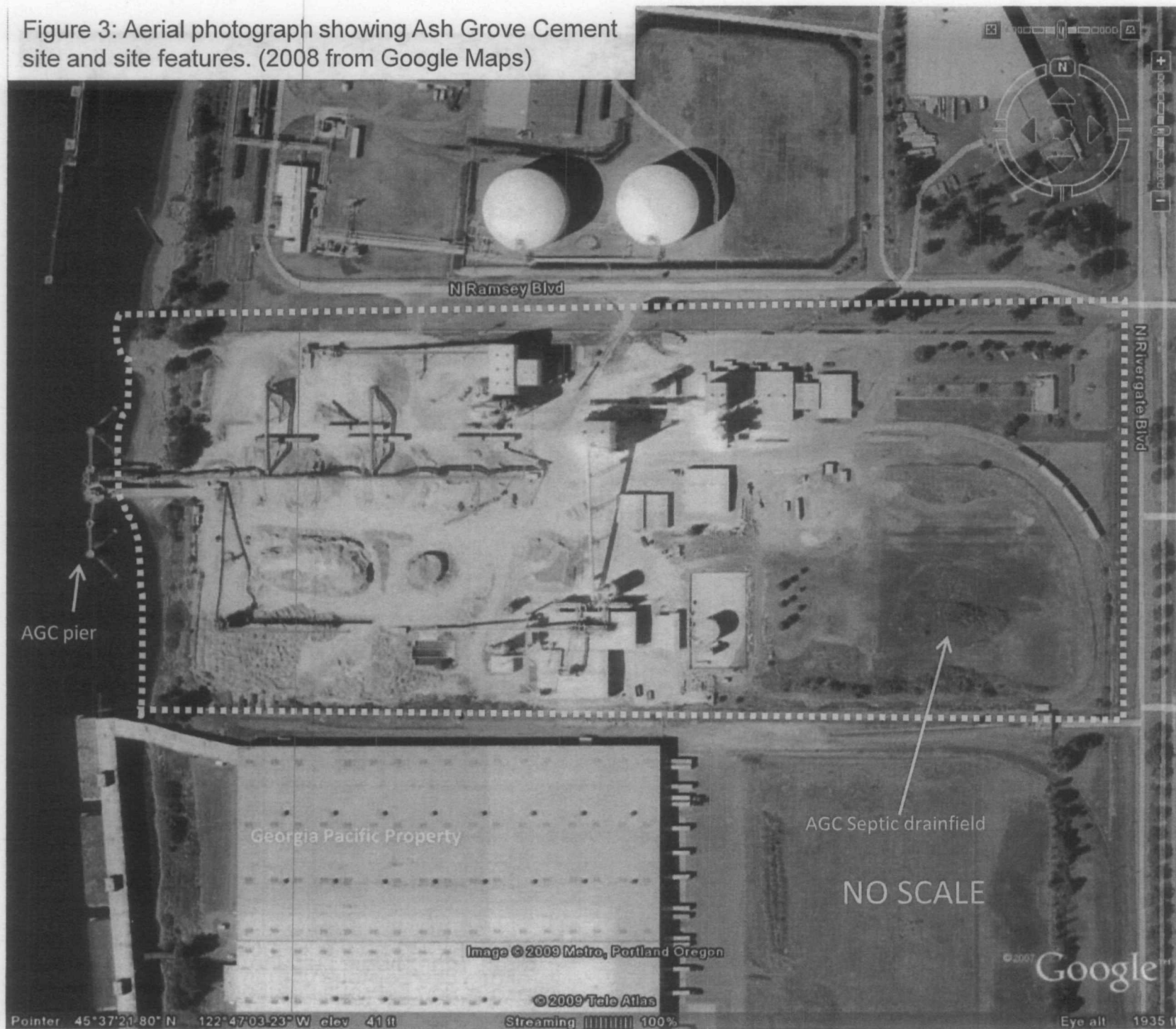
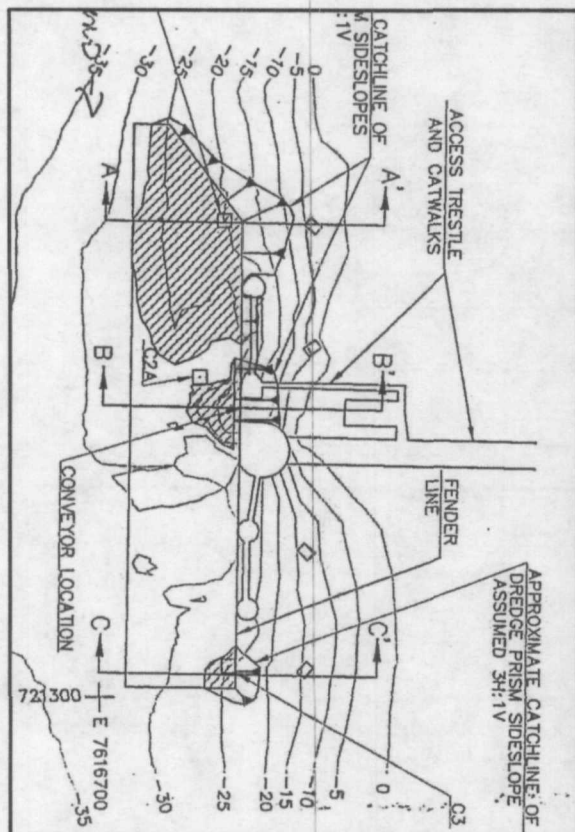


Figure 4: Aerial photograph showing river area of Ash Grove Cement site and 1995 dredge prism area. (2008 from Google Maps)



Dredge prism and sample locations – excerpt from 2005 Sediment Data Report

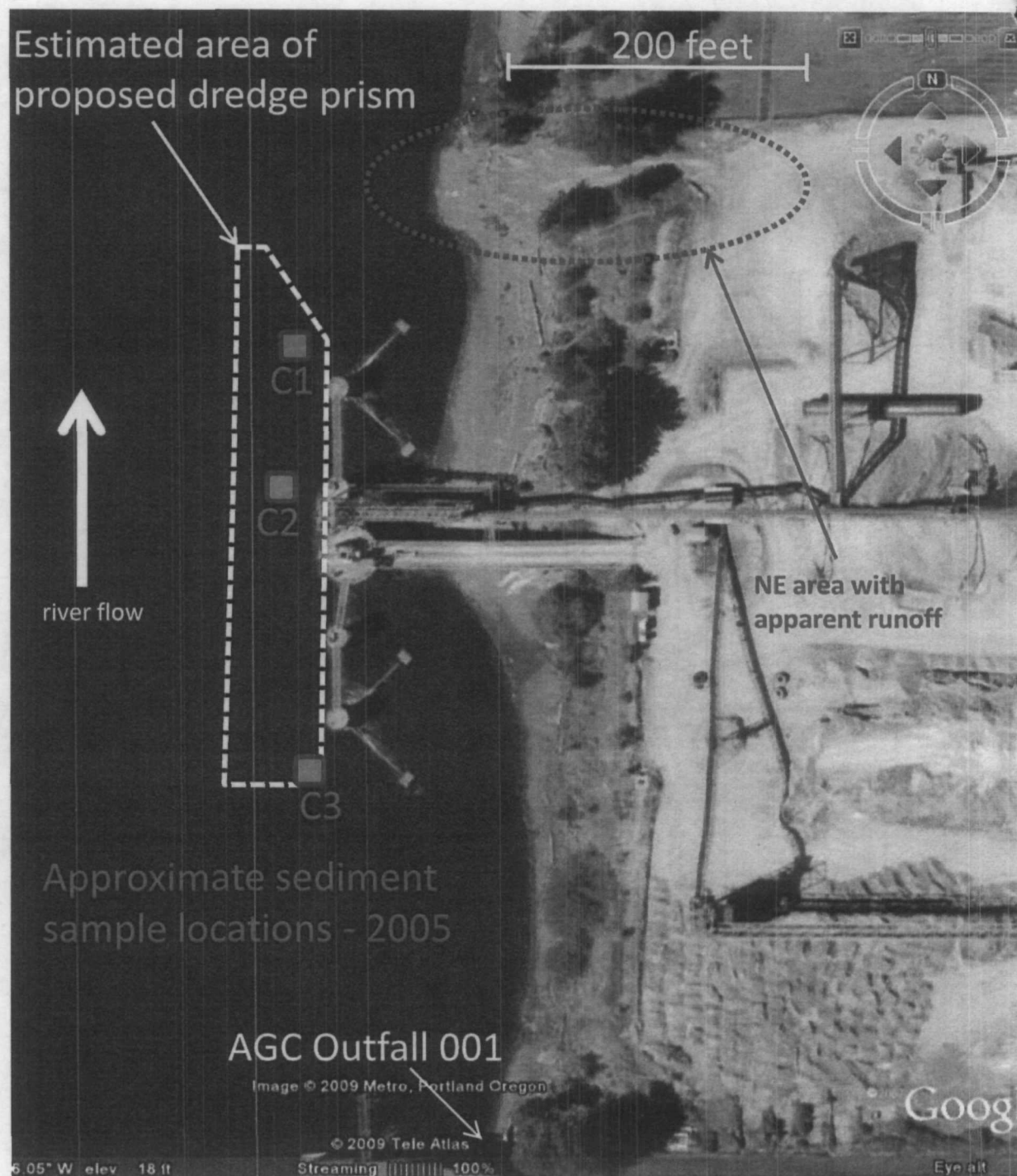


Figure 5: Detailed AGC-Rivergate Plant site operations drawing supplied to DEQ by Ash Grove Cement. Certain features highlighted by green boxes.

